

REMARKS/ARGUMENTS

Claims 1-29 are pending in the present application. Reconsideration of the claims is respectfully requested.

I. 35 U.S.C. § 103, Obviousness

Claims 1-7, 10-13 and 16-18 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz (WO 00/35265), hereinafter “Motz” in view of Hayami et al. (U.S. Patent 5,369,588), hereinafter “Hayami” further in view of Mueller et al. (U.S. Patent No. 4,950,118), hereinafter “Mueller”. This rejection is respectfully traversed.

With respect to the rejection of Claim 1, the primary issue is whether the Examiner has properly established prima facie obviousness. A secondary issue is whether the Examiner has used impermissible hindsight analysis in piecing the reference’s teachings together.

(i) Prima facie obviousness

Per Claim 1, a plurality of candidate *paths between a material location and a forwarder location* are used in performing an economic cost fact estimation that is used in selecting a preferential *path between the material location and forwarder location*. The Examiner cites Motz as teaching selecting a preferential path plan between a material location (since the material is on the harvester, whose position is known) and a forwarder location consistent with background data and *minimizing economic cost* since it describes (1) determining a plurality of conditions for directing the operation of the second agricultural machine to travel to an expected location of where the harvester is expected to be at an expected time, and (2) the plurality of conditions include (i) a desired start time for the forwarder to begin its travel to the expected location, and (ii) a desired speed of the forwarder. The Examiner opines that the economic cost minimization is described as being a part of the selected path since the goal is to minimize economic cost so that the harvester does not have to sit idle and can continue to gather more material. While this overall goal may exist, it is accomplished by ‘timing’ the forwarder to meet the harvester when the harvester’s load is full – *and not by path selection*, which is stated to be done in an area already harvested so as to not disturb unharvested crops (which therefore does

not necessarily minimize economic costs). Thus, the cost-minimization goal is accomplished by different means.

Specifically with respect to Claim 1, such claim recites “selecting, by the data processing system, a preferential path plan between the forwarder location and the material location consistent with the background data and minimization of the economic cost factors”, where such ‘material location’ that this preferential path plan pertains to is a material location of *unloaded harvested material* within a work area, wherein the unloaded harvested material is unloaded from a harvester that harvested the harvested material. Motz does not teach a path selection that pertains to unloaded harvested material, and therefore does not describe any selection of a path plan for minimization of economic cost factors.

As to the cited Mueller reference that is alleged to teach material location data on a material location of unloaded harvested material within a work area, *where the unloaded harvested material is unloaded from a harvester that harvested the harvested material*, this reference describes a fixed sensor on a conveyor belt that senses ‘when’ an object on the conveyor belt passes by. These objects are not described as being unloaded harvested material within a work area, *where the unloaded harvested material is unloaded from a harvester that harvested the harvested material*. The object characteristics for such point-in-time-detected objects are not described at all. Thus, the resulting combination does not teach or suggest determining the ‘material location’ data as that term is defined in the claims.

In addition, there would be no reason to use this Mueller sensor data in selecting a path since the sensor is fixed and therefore is always in the same location - so such path selection associated with such fixed sensor would not be needed.

(ii) Impermissible Hindsight

It is further urged that Claim 1 has been erroneously rejected using impermissible hindsight analysis. Motz’s key feature is ‘timing’, where the forwarder is able to meet the harvester at the exact location and time of where the harvester will be when it has a full load. There would have been no reason or other motivation to modify Motz according to the teachings of Mueller, which is alleged to teach determining a location for unloaded harvested material, as Motz has a strong desire *to not unload material at a location that a forwarder needs to locate*, due to the desire for the two pieces of machinery to ‘sync-up’ with one another at the exact time

a full load is achieved. Thus, the only reason for eviscerating the underlying objects/goals of Motz with such awkward modification must be coming from use of the current claims themselves, which is impermissible hindsight analysis.¹ And again, even when making such an impermissible hindsight rejection, there are still missing claimed elements (material location data on a material location of unloaded harvested material within a work area, *where the unloaded harvested material is unloaded from a harvester that harvested the harvested material*) – strongly evidencing non-obviousness of Claim 1.

Applicant initially traverses the rejection of Claims 2-7 for reasons given above with respect to Claim 1 (of which Claims 2-7 depend upon).

Further with respect to Claim 2, such claim recites “establishing a drop-off location for the unloaded harvested material; determining a path plan between the material location and the drop-off location”. As can be seen, a drop-off location for the unloaded harvested material is established. In addition, a path plan between the material location (of the unloaded harvested material that is unloaded from a harvester that harvested the harvested material) and the drop-off location is determined.

In rejecting the path determining aspect of Claim 2, the Examiner cites Motz description at page 10, line 22 – page 11, line 22, since this passage is alleged to teach that a path plan is determined from the harvester to the truck and the second agriculture machine travels along the desired path. Applicant urges that the path from the harvester to the truck does not teach or suggest a path plan between the material location of the unloaded harvested material and the drop-off location is determined, as claimed, since in this instance the material is still *loaded* in the truck. Thus, it is further urged that Claim 2 has been erroneously rejected due to this additional prima facie obviousness deficiency.

Further with respect to Claim 3, such claim recites “wherein the path plan comprises a shortest possible path that traverses at least one of a harvested area, an unharvested area, and a transportation path associated with the work area”. As can be seen, per Claim 3 the path plan

¹ It is error to reconstruct the patentee’s claimed invention from the prior art by using the patentee’s claims as a “blueprint”. When prior art references require selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight obtained from the invention itself. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985).

comprises a ‘shortest possible path’ associated with the work area.

The Examiner alleges that all aspects of Claim 3 are described by Motz page 8, line 29 – page 9, line 14, since there Motz is alleged to describe a path that is chosen to go through the *already harvested area* so the crops that have yet to be harvested are not disturbed. Applicant urges that a path going through a disturbed area in lieu of an undisturbed area does not teach or suggest a path or path plan for a shortest possible path – instead describing a path through a ‘disturbed’ area which is not described as being the shortest possible path. Thus, it is further urged that Claim 3 has been erroneously rejected due to this additional prima facie obviousness deficiency.

Further with respect to Claim 4, such claim recites “receiving harvester data including harvester location data on a harvester location of a harvester within the work area, wherein the material location of the unloaded harvested material is a different location than the harvester location of the harvester, and wherein the material location and the harvested area is updated on a regular basis”. As can be seen, *both* the material location *as well as* the harvested area is updated on a regular basis.

The Examiner alleges that Motz teaches all aspects of the regular-basis-update at page 6, line 19 – page 7, line 2 – and yet Motz does not teach or suggest any ‘material location’ for unloaded harvested material, as per Claim 4 in combination with Claim 1. Thus, Motz cannot teach any regular basis updating of a *material location of unloaded harvested material*. Nor does Mueller overcome such teaching/suggestion deficiency, since Mueller describes use of fixed sensors in detecting the alleged ‘material location of unloaded harvested material’, and these sensors detect when an object passes by, which is *random* in time – thus prompting the need for such sensors – and therefore such sensor detection of items is not described as being performed on a regular basis. Thus, it is further urged that Claim 4 has been erroneously rejected as the resulting combination does not teach or suggest a regular basis updating with respect to an unloaded harvested material location, as claimed.

Further with respect to Claim 6, such claim recites “wherein the material location is updated after the addition of a new material location”. The Examiner alleges that Motz teaches all aspects of Claim 6, and yet Motz does not describe the claimed material location since such material location is defined in the claims to be a material location of *unloaded* harvested

material. Thus, it is further urged that Claim 6 has been erroneously rejected due to such additional prima facie obviousness deficiency.

Further with respect to Claim 7, such claim recites “wherein the background data comprises transient data associated with at least one of a time-dependent location of a machine in the work area, a time-dependent location of a person within the work area, and a time-dependent definition of a harvested area associated with the work area, and wherein both the background data and the material data are specified by a user using a user interface of the data processing system”. As can be seen, both the background data and the material data are user-specified using a user interface.

The Examiner alleges that all aspects of Claim 7 are described by Motz since Motz is alleged to teach a user interface to *display* various conditions. Applicant urges that a ‘display’ of various conditions does not teach or suggest user specification of both the background data and the material data, as claimed. Thus, it is further urged that Claim 7 has been erroneously rejected due to such additional prima facie obviousness deficiency.

With respect to independent Claim 10, such claim includes the material location characteristics of Claim 1 that pertain to unloaded harvested material, and therefore similar errors exist for the rejection of Claim 10 as described hereinabove with respect to Claim 1.

Applicant initially traverses the rejection of Claims 11-13 and 16-18 for reasons given above with respect to Claim 10 (of which Claims 11-13 depend upon).

Further with respect to Claim 11, such claim recites “wherein the collected material data is stored in response to unloading the harvested material from the harvester”. As can be seen, the collected material data is stored, and such storing occurs *in response to* unloading the harvested material from the harvester.

The Examiner alleges that Mueller teaches all aspects of Claim 11, and yet Mueller does not teach or suggest either (i) harvested material, or (ii) a harvester – and therefore Mueller cannot teach all aspects of the collected material data storing aspect of such claim. Thus, it is further urged that Claim 11 has been erroneously rejected due to this additional prima facie obviousness deficiency.

Further with respect to Claim 13, such claim recites “wherein the obtaining background data comprises (i) obtaining static data and transient data as the background data, wherein the static data remains generally constant over a greater sample period and wherein the transient data

tends to vary over the greater sample period, and (ii) providing a user interface that allows a user to override the background data that is obtained”. As can be seen, a user interface that allows a user to override the background data that is obtained.

The Examiner alleges that all aspects of Claim 13 are described by Motz since Motz describes that while the system is automatic, it allows for manual override by the operator. Applicant urges that a generalized description that a user can manually ‘operate’ a machine does not teach or suggest providing a user interface that allows a user to *override the background data that is obtained*, as claimed. Thus, it is further urged that Claim 13 has been erroneously rejected due to this additional prima facie obviousness deficiency.

Therefore the rejection of Claims 1-7, 10-13 and 16-18 under 35 U.S.C. § 103(a) has been overcome.

II. 35 U.S.C. § 103, Obviousness

Claims 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz in view of Hayami as applied to claim 1 above, and further in view of Mueller, further in view of Weigelt et al. (U.S. Patent 5,712,782), hereinafter “Weigelt”. This rejection is respectfully traversed.

Applicant initially urges error in the rejection of Claims 8 and 9 for similar reasons to those given above with respect to Claim 1 (of which Claims 8 and 9 depend upon), as the newly cited reference to Weigelt does not overcome either the prima facie obviousness deficiencies or the impermissible hindsight analysis issues previously identified with respect to such claim.

Further, Claims 8 and 9 are directed to details pertaining to the *path plan selection*. The Examiner cites Weigelt as teaching all aspects of these claims, and yet Weigelt does not describe any type of path plan selection, and therefore cannot describe particular details pertaining to such (missing) path plan selection. Instead, it describes determining an *ability* to travel over a field. Thus, it is further urged that Claims 8 and 9 have been erroneously rejected due to these additional prima facie obviousness deficiencies.

Therefore the rejection of Claims 8 and 9 under 35 U.S.C. § 103(a) has been overcome.

III. 35 U.S.C. § 103, Obviousness

Claims 14, 15, 23 and 29 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz in view of Mueller. This rejection is respectfully traversed.

As to Claim 14 (and dependent Claim 15), such claim is directed to ‘marking’ of unloaded material with a marker for referencing the collected material data (“marking the harvested material with a marker for referencing the collected material data, wherein the marker is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag, and the marker is usable to locate the harvested material that has been unloaded from the harvester”).

The Examiner cites Motz’s description at page 6, line 11 – page 7, line 10 as teaching such marking step. Applicant urges that this cited passage describes (1) a database having geographic information of field characteristics (areas already harvested, obstacles in the field, field boundaries), (2) position data for two machines (the alleged harvester and the alleged forwarder), and (3) a volume indication subsystem that indicates the volume of harvested material in a bin (depth detection). None of these activities are a ‘marking’ action associated with *harvested material that is marked*, whereas Claim 14 explicitly recites “marking the harvested material with a marker for referencing the collected material data, wherein the marker is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag, and *the marker is usable to locate the harvested material that has been unloaded from the harvester*”.

The Examiner cites Mueller’s teachings col. 3, line 35- col. 4, line 34 as describing such ‘marker’, as this cited passage describes an ability to ‘locate’ material via an optical sensor. However, this optical sensor is fixedly mounted to a conveyor to detect an object passing by. The Mueller ‘object’ that this sensor is allegedly used to locate the position of is not described as being specially ‘marked’ to locate the object, as per Claim 14 (“marking the harvested material with a marker”). In addition, this Mueller object is also not harvested material that has been unloaded from the harvester, as previously described. Thus, it is urged that Claim 14 (and dependent Claim 15) has been erroneously rejected under 35 U.S.C. § 103(a).

Applicant traverses the rejection of Claim 23 (and dependent Claim 29) for similar reasons to those given above with respect to Claim 10.

Therefore the rejection of Claims 14, 15, 23 and 29 under 35 U.S.C. § 103(a) has been overcome.

IV. 35 U.S.C. § 103, Obviousness

Claims 19-22 and 24-28 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz in view of Mueller, further in view of Hayami. This rejection is respectfully traversed.

Applicant initially urges error in the rejection of Claims 19-22 for similar reasons to those given above with respect to Claim 14 (of which Claims 19-22 depend upon), as the newly cited reference to Hayami does not overcome the teaching/suggestion deficiencies identified hereinabove with respect to such claim.

Further with respect to Claim 19 (and dependent Claims 20-22), such claim recites “reading the marker for referencing the stored data; determining, in response to the reading of the marker, a forwarder location of a forwarder in the work area; identifying a preferential path plan with an efficient path cost between the forwarder location and a material location of the harvested material that has been unloaded from the harvester and between the material location and the drop-off destination based the stored data, including material data and background data, and based on cost factor data”. As can be seen, Claim 19 includes reading the marker for referencing the stored data, and determining, in response to the reading of the marker, a forwarder location of a forwarder in the work area.

The Examiner alleges that Motz teaches such marker characteristics at page 8, lines 6-19 since there is described an ability to read stored information, including various markers such as machine position data and site data which include field information. Applicant urges that such alleged ‘various markers’ are not equivalent to the claimed marker since they do not have the characteristics of the claimed marker, such as a marker (1) this is used for marking harvested material, referencing collected material data, and locating the harvested material that has been unloaded from the harvester, or (2) that is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag. Instead, Motz merely describes its marker as being machine position data or field information. Thus, it is further urged that Claim 19 (and dependent Claims 20-22) have been erroneously rejected due to these additional prima facie obviousness deficiencies.

Applicant initially urges error in the rejection of Claims 24-28 for reasons given above with respect to Claim 23 (of which Claims 24-28 depends upon), as the newly cited reference to Hayami does not overcome the teaching/suggestion deficiencies identified hereinabove with respect to such claim.

Further with respect to Claim 25, such claim recites “a reading device reading a marker for referencing the stored data, wherein the marker is associated with the harvested material that is unloaded from the harvester”. As can be seen, Claim 25 also recites marker characteristics as well as an associated device for reading such marker.

The Examiner alleges that all aspects of Claim 25 are described by Motz at page 8, lines 6-19, since there Motz describes an ability to read various ‘data’. Applicant urges that such ‘various data’ is very different from the claimed ‘marker’ as such data is not described as having the particular characteristics of the claimed ‘marker’ that are expressly recited in the claims (for similar reasons to those given above with respect to Claims 14 and 19). Thus, it is further urged that Claim 25 has been erroneously rejected due to these additional prima facie obviousness deficiencies.

Therefore the rejection of Claims 19-22 and 24-28 under 35 U.S.C. § 103(a) has been overcome.

V. Conclusion

The subject application is patentable over the cited references and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite prosecution or aid the examination of this application.

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Respectfully submitted,

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